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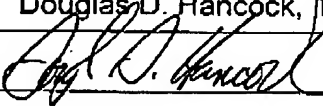


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**IN THE U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Robert Otterson

Filed: April 1, 2004

Application No.: 10/816,664

Examiner: Rita Ramesh Patel

Group Art Unit: 1746

For: Flat Surface Washing Apparatus

**REPLY BRIEF
(37 CFR § 41.37)**

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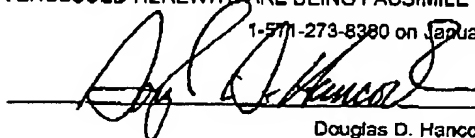
This is filed in response to the Examiner's Answer mailed November 17, 2006 in which the Examiner, in response to Applicant's appeal brief, makes a new ground of rejection over the same reference over which the claims were previously rejected.

The Applicant wishes to maintain this appeal pursuant to 37 C.F.R. § 41.39(b)(2).

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1. Real Party in Interest

The real party in interest is Robert C. Otterson

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2. Related Appeals and Interferences

There are no related appeals or interferences.

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3. Status of Claims

Claims 1 through 15 are rejected and are the claims on appeal.

Claims 16 - 20 are withdrawn.

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4. Status of Amendments

No claim amendments have been filed subsequent to the final office action that was mailed June 19, 2006.

5. Summary of Claimed Subject Matter

The invention claimed herein is a high pressure washer device that is mounted on a wheeled chassis. The device is especially useful for washing flat surfaces such as tennis courts. An engine and high pressure pump are mounted onto the wheeled chassis. High pressure water flows to a rotating wand and nozzle assembly on the chassis so that as the chassis is moved along a linear path, high pressure water is sprayed onto the underlying surface.

Independent claim 1 is directed to an apparatus for cleaning a surface comprising a wheeled chassis (e.g., Fig. 1, reference numbers 12, 18; specification at pages 4, 5), an engine (e.g., Fig. 1, reference number 14; specification at page 5) and high pressure pump (e.g., Fig. 1, reference number 16; specification at page 5) mounted to the chassis. The pump has an inlet e.g., (Fig. 1, reference number 30; specification at page 5) and a high pressure outlet (e.g., Fig. 1, reference number 32; specification at page 5). A rotary valve (e.g., Fig. 3, reference number 50; specification at page 7) is mounted to the chassis and is fluidly connected to the high pressure outlet (e.g., Fig. 3 and specification at page 7). At least two wands (e.g., Figs. 2 and 3, reference numbers 58, 60; specification at pages 7, 8) are fluidly connected to the rotary valve so that rotation of the valve causes the wands to rotate (e.g., specification at page 9). Each wand has a nozzle (e.g., Fig. 2, reference numbers 62, 64; specification at pages 7, 8) mounted to the wand and oriented so that high pressure water is sprayed from the nozzles toward the surface (e.g., Fig 3; specification at page 9).

Independent claim 9 includes many of the elements just described, and also high pressure water distribution means (e.g., specification at pages 6 through 9) connected to the rotary valve for directing water sprayed from nozzles in a 360° rotary spray pattern (e.g., Fig. 5; specification at page 9). Claim 9 also calls out diffuser plate means (e.g., Figs. 2 and 3, reference numbers 70, 72; specification at page 8) for interrupting the rotary spray pattern in at least part of the 360° rotary spray pattern e.g., (Figs. 3 and 4; specification at pages 9, 10).

Dependent claim 2 specifies that the rotary valve is capable of causing the nozzles to rotate in a circular pattern so that water is sprayed from the nozzle in a

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path (e.g., specification at page 7). Dependent claim 3 requires that the path is circular (e.g., Fig. 5). Dependent claims 4 and 11 recite the diffuser plates (70, 72) mounted to the chassis between the nozzles and the surface such that the diffuser plates occlude at least a portion of the path (e.g., Figs. 3 and 4; specification at page 8, 9).

Dependent claim 12 recites that each diffuser plate of the diffuser plate means interrupts the rotary spray pattern through an arc of at least about 45° (specification at page 11). Claim 13 specifies that the chassis is configured for movement along a linear path and each diffuser plate interrupts the rotary spray pattern at opposite lateral sides of the rotary spray pattern (e.g., Fig. 4; specification at pages 9, 10).

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6. Grounds of Rejection to be Reviewed on Appeal

Claims 1 – 15 are rejected under 35 USC § 103(a) as being obvious in view of Poppitz (US Patent No. 6,012,645).

7. Argument

A. Introductory Comments

Even though of the claims are rejected over the same reference as previously applied, on the same statutory basis that was previously cited (i.e., § 103), the Examiner states that "the new grounds of rejection indicate and clarify Poppitz's obviation over appellant's engine feature and mounting the engine on the chassis."

B. Claim Rejections

The Examiner has not made out a *prima facie* case of obviousness. The well-established test for a *prima facie* case of obviousness requires, among other things, that the prior art references teach or suggest all of the claim limitations. The MPEP, in section 2143, sets forth what is needed for establishing a *prima facie* case of obviousness for rejecting claims under 35 USC § 103. The pertinent portion of that section is reproduced here:

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)."

The reference cited by the Examiner fails to meet each of these criteria.

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I. The Poppitz Reference Does not Teach all Claim Limitations

a. Independent Claim 1

Independent claim 1 requires among other things, an engine and a high pressure pump mounted to the chassis. Poppitz's floor cleaning machine does not include either an engine or a pump mounted to the wheeled chassis. Indeed, while Poppitz mentions that a pump or other pressure source is the source of high pressure water (column 2, lines 36 through 38), the pump, which is somewhere at the upstream end of high pressure hose 25, is not shown and there is no mention whatsoever of an engine to pressurize the pump.

Although Poppitz fails to do more than merely mention a pump, and completely fails to even mention an engine, the Examiner nonetheless argues that it would have been obvious to (a) use an engine with the pump, (b) mount the pump to the chassis, and (c) mount the engine to the chassis, because "it has been held that making an old device portable or movable without producing any new and unexpected results involves only routing skill in the art." (Citing *In re Lindberg*, 93 U.S.P.Q. 23 (C.C.P.A. 1952).) With reference to claim 1, Applicant points out that the "old device" in this case (i.e., Poppitz) had no engine, and had no pump mounted to the chassis. As such, the claimed invention does not just make the "old device" portable, but adds structures to the device not even mentioned in the reference. Claim 1 is not a case where the applicant has made an old device portable.

The Examiner further argues that despite the fact that the reference fails to disclose all of the elements found in the claim, the claim would be obvious "since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art." (Citing *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).) While the Examiner's statement quoted above is undoubtedly accurate as applied by the Court, it is not instructive or applicable in the context of the invention defined in claim 1 and certainly does not lend any strength to the argument that the claim is

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obvious. Poppitz fails to show a pump mounted to a chassis and therefore does nothing to teach one skilled in the art how the pump might be mounted. Since Poppitz fails to even disclose an engine, let alone an engine mounted to the chassis for pressurizing the pump, it cannot be argued that a claim limitation calling for an engine mounted to the chassis would have been obvious. The claim therefore goes far beyond merely forming in one piece an article that used to be made in two pieces (the *Howard* case cited by the Examiner is inapposite: it dealt with a claim to a stove, where the difference between the claim and the prior art was that the claim called for casting in one piece parts that we formerly assembled in two pieces. In the present case we do not have a prior art reference that discloses all the pieces, so to speak).

The invention called out in claim 1 allows the chassis to be moved relatively easily because only a low pressure hose is attached to the wheeled chassis—the pump and engine are mounted on the chassis itself. A device such as Poppitz requires a high pressure hose to be attached to the wheeled chassis. A high pressure hose is quite stiff due to the pressure of fluid—water—flowing into and through the hose. When such a hose is attached to a wheeled chassis such as the one shown in Poppitz, the chassis becomes difficult to maneuver because the hose is so stiff. This increases the difficulty of operating the device.

On the other hand, by mounting the engine and high pressure pump on the wheeled chassis as called out in claim 1, the device may be connected to a low pressure fluid source. This significantly increases the ability of the chassis to be maneuvered over the surface that is being cleaned.

Poppitz does not describe or suggest a wheeled chassis that includes a pump mounted to the chassis and there is nothing in the Poppitz disclosure that would suggest that it would be desirable or beneficial to mount the pump on the chassis, or how exactly that might be done. What's more, because Poppitz fails to disclose an engine, let alone an engine mounted to the chassis, the reference cannot be said to teach this structural limitation. While it is true that a pump requires some kind of engine to power it, Poppitz does not supply the teaching of how the pump would be powered or mounted with an engine on a chassis. On

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this basis, Poppitz completely misses the "how to" requirement of an enabling disclosure.

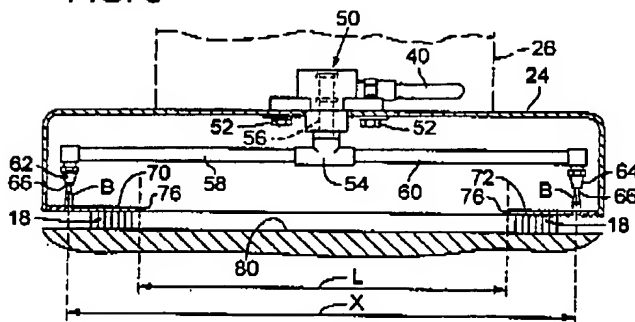
Since the specific structural limitations found in claim 1 are not disclosed by the art, the art does not meet the requirement of teaching or suggesting all of the claim limitations and the claim is allowable.

b. Independent Claim 9

As with claim 1, independent claim 9 also requires a high pressure pump and an engine mounted to the chassis, and is therefore distinguishable from and patentable over Poppitz for the same reasons noted above. But claim 9 calls out diffuser plate means for interrupting the rotary spray pattern in at least part of the 360° spray pattern. The Examiner argues that Poppitz does describe diffuser plates, but as detailed below, Applicant disagrees with the Examiner's position, which fundamentally ignores substantive limitations in the claim.

Applicant's claimed diffuser plates are described first. Fig. 3 from the

FIG. 3



subject application is reproduced on the left.

Briefly described, a rotary valve 50 is mounted to the chassis and the wands 58 and 60 rotate as the rotary valve rotates. Nozzles 62 and 64 are mounted to the wands and direct a spray of

water toward the underlying surface 80 in a rotary pattern. Diffuser plates 70 and 72 are mounted to the chassis between the nozzles and the surface such that the diffuser plates occlude a portion of the spray pattern of water as it is sprayed out of the nozzles.

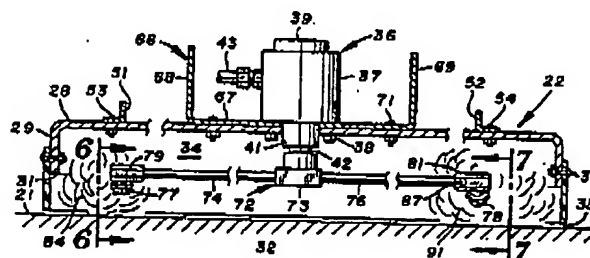
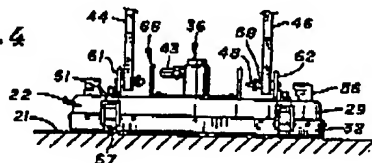
The diffuser plates of the present invention are detailed in Figs. 2 and 3 (structures 70 and 72) and are described in detail in the specification at pages 8

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through 12. In a nutshell, as the wands and nozzles rotate the nozzles pass over the diffuser plates for a portion of the rotational path, and accordingly, the diffuser plates interrupt or occlude at least a portion of the spray path. Stated another way, the diffuser plates block the spray from the nozzles from impinging directly on the underlying surface. As a result of the diffuser plates, the otherwise circular spray pattern of water sprayed onto the surface is truncated where the water sprayed from the nozzles hits the diffuser plates rather than the surface (see, e.g., Fig. 4 and the accompanying description). The purpose for this structure is described in the specification (see, e.g., page 10, last paragraph), and in brief, protects the underlying surface from damage.

Poppitz does not describe diffuser plates as claimed. As illustrated in Figs. 4 and 5, reproduced below, Poppitz includes a vertical, annular flexible and fluid impervious skirt 32 fastened to the bottom portion of the side wall 29 with fasteners 33. The skirt 32 has a bottom end 35, which is located relatively closely to the surface 21 so that the skirt "confines high pressure cleaning fluid to the immediate surface to be cleaned." (Column 2, lines 63 – 64.)

FIG. 4**FIG. 5**

The substance of the Examiner's argument relating to the structure disclosed by Poppitz is quoted verbatim here:

"Clearly, the skirt 32 provides diffusing means, for interrupting the rotary spray pattern; the skirt prevents the spray pattern from

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spraying in a 360 degree field by forming a restricting wall that also extends vertically. Furthermore, the bottom ends 35 of Poppitz mounted to the chassis between the nozzles and the surfaces such that the diffuser plates occlude at least a portion of the path. The skirt confines fluid to the area under the device and prevents dissipation of mist therefrom. The skirt of Poppitz obstructs the spraying pattern of the rotational sprays and thus serves to occlude the spray path because it forms a restrictive wall.

Applicant believes that the Examiner misconstrues the Poppitz reference on numerous bases and ignores substantive claim language. It is of course essential that the actual language of the claim is considered in the analysis: claim 9 requires (among other things), that the rotary valve directs water in a rotary spray pattern **toward a surface**, and that the diffuser plate means **interrupt** the spray pattern in at least part of the rotary spray pattern. Poppitz's skirt, including the bottom ends 35 of the skirt, depends vertically downward from the side wall 29. The skirt does not include any horizontal sections such as would be necessary to interrupt the rotary spray pattern as it is sprayed toward a surface. From the figures reproduced on the previous page it is apparent that the vertical nature of Poppitz's skirt does nothing to **interrupt** the spray. There is a substantial difference between interrupting a spray pattern as required by claim 9, and confining the spray to an area beneath the apparatus as shown in Poppitz. Significantly, Poppitz in fact teaches that the nozzles 77 and 78 should direct fluid directly onto the surface (see, e.g., column 4, lines 17 – 20: "Jet 83 deflects directly off surface 21..."). As such, Poppitz teaches away from use of the claimed diffuser plate means, which are required to interrupt the spray path.

Regarding the Examiner's quoted arguments above, the skirt clearly **does not** prevent the nozzles from directing the spray in a 360° rotary spray pattern, at least to the extent those terms are used in the claims. As noted above, the claim requires that the rotary spray pattern is directed toward the surface. If Poppitz's skirt is construed as being able to interrupt any rotary spray pattern, it would be a spray pattern directed from the nozzles horizontally outwardly, directly toward the vertical skirt and therefore not at the surface. This plainly is not what Poppitz's

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skirt does, and certainly is not what the language of claim 9 says. Furthermore, the Examiner argues that "the bottom ends 35 of Poppitz are **mounted to the chassis between the nozzles and the surfaces**" so as to occlude at least a portion of the path. Again, in claim 9 the path is defined as being directed toward a surface. Not only is Poppitz's skirt plainly not "mounted to the chassis **between** the nozzles and the surfaces", as argued by the Examiner (emphasis added), but even if we were to adopt this tortured interpretation of Poppitz's structure the vertical walls cannot occlude a portion of the path.

Claim 9's diffuser plate means must function to interrupt the rotary spray pattern in at least part of its 360° rotation. Poppitz's skirt 32 is not structurally equivalent to the claimed diffuser plate means, and does not provide the same function because the skirt does not interrupt the spray pattern at all as required by claim 9. Nor is it intended to: its function is to confine the fluid to the area under the device. The function of the claimed diffuser plate means is markedly different: to interrupt the spray pattern. As detailed in the specification, by interrupting the spray pattern in a portion of the path, the high pressure spray of fluid does not impinge directly on the surface that is being cleaned (in those portions of the path that are interrupted), thereby eliminating damage to the surface.

For these reasons, independent claim 9 is allowable over Poppitz.

c. Dependent Claims 4, 11, 12, 13

Claim 4 depends from claim 1 and is directed to the diffuser plates described in the specification as detailed above. The claim requires that the plates are mounted to the chassis **between the nozzles and the surface so that the plates occlude at least a portion of the path**. As noted above, the path is from the nozzles toward the surface, and as detailed at length in the specification, as the wands and nozzles of the present invention rotate, the nozzles pass over the diffuser plates through a portion of the rotational path. Accordingly, where the nozzles pass over the diffuser plates, the diffuser plates

occlude the spray path. As a result of the diffuser plates, the otherwise circular spray pattern of water sprayed onto the surface is truncated where the water sprayed from the nozzles hits the diffuser plates rather than the surface. (See e.g., Fig. 4 on the following page.)

Poppitz's skirt 32 does not in any sense of the word "occlude" any portion of the spray path—indeed, in Poppitz the fluid sprayed from the nozzles 77 and 78 travels unimpeded and directly to the underlying surface 21. The Merriam-Webster Online Dictionary defines "occlude" as "to close up or block off". This is consistent with the specification, where the diffuser plates are described as occluding a portion of the spray path (see, e.g., specification at page 8), and preventing fluid from the nozzles from directly impinging on the surface (see, e.g., specification at page 10 and Fig. 3).

Claim 11 depends from claim 9 and specifies that the diffuser plate means of claim 9 further comprises a pair of plates mounted to the chassis in a position such that the plates lie *between* the nozzles and the surface. Poppitz does not describe or suggest diffuser plates, let alone a pair of such plates mounted to the chassis in a position such that the plates lie between the nozzles and the surface. As noted above, Poppitz's skirt does not interfere at all with the fluid flowing from the nozzles 77 and 78, at least until the fluid rebounds off surface 21.

Claim 12 specifies that each diffuser plate interrupts the rotary spray pattern through an arc of at least about 45°. The rotary spray pattern is defined as the 360° pattern defined when the nozzles rotate. Poppitz could not possibly teach or suggest interruption of the rotary spray pattern in an arc of at least about 45°, as claimed.

Finally, claim 13 adds limitations directed to movement of the chassis along a linear path wherein each diffuser plate interrupts the rotary spray pattern at opposite lateral sides of the rotary spray pattern. This feature is described in the specification at, for example, pages 9 through 10, and is illustrated best with Fig. 4, which is reproduced on the next page. From Fig. 4 it may be seen that the spray pattern has been truncated on opposite sides of the rotary path (i.e.,

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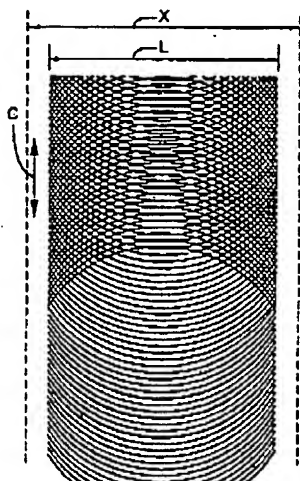


FIG. 4

the difference between dimensions X and L—the truncation caused by the diffuser plates.

The Examiner incongruously argues that “the skirt of Poppitz occludes along a length and width of a linear spray pattern of the washing machine; if the machine were driven forward to form a rectangular surface that is washed, the skirt of Poppitz would occlude the spray path along the length and width of the washing machine.” But the Examiner has ignored the language of the claim, which requires that each diffuser plate interrupts the rotary spray pattern at opposite lateral sides of the pattern. To reiterate what was said above, the “rotary spray pattern” called out in the claim is required to be a 360° rotary pattern directed *toward a surface*. No matter how Poppitz's chassis is moved, it would be impossible to create the truncated spray pattern specified in claim 13.

II. There is No Motivation to Combine the References

The Examiner relies on a single reference that fails to teach all limitations of the claims (i.e., a high pressure pump mounted to the chassis; and an engine mounted to the chassis; diffuser plates). There is nothing in this reference that provides any motivation that would lead one skilled in the art to which the invention pertains to make the claimed structure. There must be something in the cited reference that suggests the desirability of the claimed invention; the suggestion cannot be derived from the specification of the application.

Although Poppitz teaches a surface cleaning apparatus including a wheeled chassis, there is no suggestion in that reference that the invention defined in the independent claims would be desirable. No even through impermissible hindsight analysis can the claimed invention be derived.

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III. There is No Reasonable Expectation of Success

There can be no reasonable expectation that the invention defined in independent claims 1 and 9 would be successful based on the Poppitz reference. As noted above, Poppitz does not disclose or suggest the structures set forth in claims 1 and 9, and does not have any structure that provides the same function as the diffuser plate means in claim 9. As such, there are claim limitations that are missing, and on this basis there can be no expectation of success.

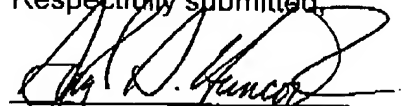
Appellant submits that for the reasons discussed above, the criteria set forth above for establishing a *prima facie* case of obviousness under 35 USC § 103 have not been met with respect to the independent claims or dependent claims and, therefore, the rejection of claims 1 and 9, and the claims depending therefrom should be reversed.

C. Summary

In view of the foregoing, appellant respectfully requests reversal of all of the rejections and allowance of all claims pending in the application.

Respectfully submitted,

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8. Claims Appendix

1. Apparatus for cleaning a surface, comprising:
 - a wheeled chassis;
 - an engine and a high pressure pump mounted to the chassis, the pump having an inlet and a high pressure outlet;
 - a rotary valve mounted to the chassis and fluidly connected to the high pressure outlet and having at least two wands connected to the rotary valve so that rotation of the valve causes the wands to rotate; and
 - a nozzle mounted to each wand and oriented so that high pressure water is sprayed from the nozzles toward the surface.
2. Apparatus according to claim 1 wherein the rotary valve is capable of causing the nozzles to rotate in a circular pattern so that high pressure water is sprayed from the nozzles in a path.
3. Apparatus according to claim 2 wherein the path is circular.
4. Apparatus according to claim 3 including a pair of diffuser plates mounted to the chassis between the nozzles and the surface such that the diffuser plates occlude at least a portion of the path.
5. Apparatus according to claim 1 including a first valve between the high pressure outlet and the rotary valve, said first valve movable from a neutral position in which water flowing therethrough is returned to the high pressure pump, and a second position in which water flowing therethrough is directed to the rotary valve.

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6. Apparatus according to claim 5 including a second valve fluidly connected to the first valve and a high pressure outlet.
7. Apparatus according to claim 6 wherein when the first valve is in the second position and the second valve is in a second position, water is directed through the high pressure outlet of the second valve.
8. Apparatus according to claim 5 including a pressure regulating valve between the high pressure outlet and the first valve.
9. High pressure washing apparatus, comprising:
 - a wheeled chassis;
 - an engine and a high pressure pump mounted to the chassis, the pump having an inlet and a high pressure outlet;
 - a rotary valve mounted to the chassis and fluidly connected to the high pressure outlet;
 - high pressure water distribution means connected to the rotary valve for directing water sprayed from a pair of nozzles in a 360° rotary spray pattern toward a surface; and
 - diffuser plate means for interrupting the rotary spray pattern in at least part of the 360° rotary spray pattern.
10. The high pressure washing apparatus according to claim 9 wherein the high pressure water distribution means further comprises a pair of opposed wands and a nozzle connected to each of the wands.

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11. The high pressure washing apparatus according to claim 9 wherein the diffuser plate means comprises a pair of diffuser plates mounted to the chassis in a position such that the plates lie between the nozzles and the surface.
12. The high pressure washing apparatus according to claim 11 in which each diffuser plate interrupts the rotary spray pattern through an arc of at least about 45°.
13. The high pressure washing apparatus according to claim 12 in which the chassis is configured for movement along a linear path and wherein each diffuser plate interrupts the rotary spray pattern at opposite lateral sides of the rotary spray pattern.
14. The high pressure washing apparatus according to claim 9 including valve means for selectively directing high pressure water to the high pressure distribution means of to the pump.
15. The high pressure washing apparatus according to claim 14 including high pressure regulating means for adjusting the pressure of water in the high pressure water distribution means.
16. (Withdrawn) A method of washing a surface, comprising the steps of:
 - a) mounting to a wheeled chassis an engine, a pump having a low pressure inlet and a high pressure outlet, and a pair of rotating wands having nozzles mounted in spaced apart positions thereon; and
 - b) supplying water to the low pressure inlet, pressurizing the water and causing high pressure water to spray from the nozzles in a 360° spray path toward the surface.

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17. (Withdrawn) The method according to claim 16 including the step of blocking at least a portion of the 360° spray path so that high pressure water is blocked from directly hitting the surface in the blocked portion.
18. (Withdrawn) The method according to claim 16 including blocking at least a portion of the 360° path at opposed sides of the path.
19. (Withdrawn) The method according to claim 18 including blocking the path through an arc of at least about 45° on opposite sides of the path.
20. (Withdrawn) The method according to claim 19 including blocking the path through an arc of between about 60° and 75° on opposite sides of the path.

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9. Evidence Appendix

None

Attorney Ref. No: 1360-001/ddh

10. *Related Proceedings Index*

None